

SEAT No. _____

No. of printed pages : 2

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SARDAR PATEL UNIVERSITY

M.Sc. Polymer Science & Technology Semester-IV Examination – 2018

Thursday, 12th April 2018

2:00 p.m. to 5:00 p.m.

PS04CPST09: Specialty Polymers

Note: (1) Attempt all questions.

Total marks: 70

(2) Figures to the right indicate full marks.

Que. 1 Answer the following

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- (1) In ionic polymer, If bound ion is sulphonate group then polymer is known as _____ exchange polymer
(a) cation (b) anion (c) zwitter ionic (d) none of these
- (2) _____ Polymer is used in analytical separation technique in gel electrophoresis
(a) polyvinyl pyrrolidone (b) Polyvinyl alcohol (c) Polyacryl amide (d) none of these
- (3) In polyvinyl pyrrolidone, k value indicate _____
(a) Viscosity Mol.wt. (b) Number average mol.wt. (c) Weight Average Mol.wt. (d) none of these
- (4) Which polymer has highly corrosive resistance and used as a magnetic stirrer coating?
(a) PTFE (b) polysulfone (c) polyether (d) Kevlar
- (5) Which type of polymer is known as ionene?
(a) Contain sulfonate group (b) contain phosphonate group
(c) Contain quaternary group (d) contain carboxylate group
- (6) _____ gum is known as acacia gum
(a) natural gum (b) alginate (c) guar gum (d) gum arabic
- (7) Guar gum is a mixture of _____
(a) Galactose and mannose (b) amylose and amylopectin (c) glucose and fructose (d) none of these
- (8) Which product is formed when sodium salt of cellulose reacted with with propylene oxide
(a) methyl cellulose (b) sodium carboxy methyl cellulose (c) hydroxy propyl cellulose (d) none of these

Que. 2 Answer the following (any seven)

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- (1) How to improve low performance polymers for high temperature use?
- (2) How gelatin is produced? Write properties and application of gelatin
- (3) Write a note on alginate
- (4) Why we need thermally stable polymer?
- (5) Discuss the application of hydrophilic polymer

- (6) Define LOI. Explain the burning of polymer
- (7) Write a note on guar gum
- (8) Explain the semi synthetic polymer
- (9) Discuss piezoelectricity and pyroelectricity
- Que. 3** (a) Write a reaction mechanism of polyparaphenylene and give the properties and application **06**
- (b) **Answer the following** **06**
1. Write a note on polytetrafluoroethylene
 2. Discuss the Nomex and Kevlar polymer
- OR**
- (b) **Discuss the following** **06**
1. Polyphenylene oxide
 2. Polysulphone
- Que. 4** (a) Write a synthesis scheme, property and application of polyimide **06**
- (b) **Write a note on** **06**
1. Polyetherether ketone
 2. Polyvinyl alcohol
- OR**
- (b) **Discuss the following** **06**
1. Casein
 2. Polyvinyl pyrrolidone.
- Que. 5** (a) Write a note on polyelectrolyte for Ion exchange **06**
- (b) Explain hydrogel polymer **06**
- OR**
- (b) **Answer the following** **06**
1. Explain the synthesis of ionic polymer by post functionalization of a standard pre-formed polymer
 2. Explain the classification of Ionic polymer
- Que. 6** (a) Write a note on Ionic crosslinking **06**
- (b) Explain the hydrophilicity in Ionic polymer **06**
- OR**
- (b) Write a note on Polyacrylamide **06**

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